

Remarks/Arguments:

This Amendment adds no new claims, and is provided to amend claims 1, 2, 8, 9, 12, 14, 15, 16 and 17. No new matter has been added. Upon entry of this Amendment, claims 1-17 will be pending.

Specification:

The Applicant has amended paragraph 55 of the specification to correct a typographical error.

Objection to the Claims:

The Examiner has objected to claim 16 as including a term lacking proper antecedent basis. Accordingly, the Applicant has amended claim 16 as suggested by the Examiner, and respectfully requests the withdrawal of the objection to claim 16.

Rejections of the Claims under 35 U.S.C. 112

The Examiner has rejected claims 15-17 under 35 U.S.C. 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

The Applicant has amended claim 15 to recite a main assembly process, and a sub-assembly process, which reflect processes in which respective main assembly and sub-assembly components are assembled (see paragraphs 52-53 and 59-60). An exemplary benefit of embodiments of the present invention is the elimination of a position alignment jig in the main assembly process, be it performed at a main assembly production line or elsewhere. It would be expected that the main assembly process would be performed at a main assembly production line, and that the sub-assembly process would be performed along a sub-assembly production line, but embodiments of the present invention are not limited thereto. Claim 15 has been further amended to recite the fixing member being fixed to “a laser beam position”

alignment jig, which more accurately describes the alignment jig. This is not new matter, and is noted in the specification (see paragraphs 51 and 56).

The Applicant believes that this clarifies claim 15. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 112 of independent claim 15 as amended, and dependent claims 16 and 17 which depend from claim 15.

The Applicant has amended claim 17 to correct an antecedent basis and recite a jig which has a rotary gear engaged with a gear section of the rotating member “while fixing the fixing member of the multibeam light source unit”. This is not new matter, and is noted in the specification (see paragraph 56). The jig fixes the fixing member, such that movement is limited to only that of the rotating member.

The Applicant believes that this clarifies claim 17. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 112 of independent claim 17 as amended.

Rejections of the Claims under 35 U.S.C. 102(b)

The Examiner has rejected claims 1-3, 6, 7 and 15 under 35 U.S.C. 102(b), as being anticipated by U.S. Patent No. 6,320,647, issued to Makino (hereinafter Makino). Specifically, the Examiner points to Makino as disclosing a multibeam light source unit comprising a diode unit, a rotating member, and a fixing member, purportedly anticipating the invention as claimed by the Applicant in independent claim 1.

However, the Applicant has amended claim 1 to further recite a “fixing member comprising a first member for receiving the rotating member and a second member extending substantially perpendicular from the first member and bisected by a continuous semi-circular groove, for securing the first member to a frame”, and amended claims 2 and 8 to correct antecedent basis. This is not new matter, and is noted in the specification (see paragraph 47 and Figs. 3A and 3B).

In regard to claim 1 as amended, the Applicant has recited an exemplary embodiment of the present invention which comprises a fixing member with first and second perpendicular members. Specifically, the Applicant has recited a second member which extends substantially perpendicular to the first member and which is bisected by a continuous semi-circular groove.

In contrast, the Examiner points to Makino as disclosing a fixing member comprising the base 10 and housing 12. However, the base 10 and housing 12 appear as flat portions which would lie parallel to each other. Neither extend substantially perpendicular from the other, and neither is bisected by a continuous semi-circular groove, as claimed by the Applicant in claim 1 as amended.

Accordingly, the Applicant asserts that the base 10 and housing 12 of the Makino reference do not disclose nor reasonably suggest each element of claim 1 as amended. Specifically, the Applicant asserts that the base and housing of the Makino reference do not disclose nor reasonably suggest a second member extending substantially perpendicular from a first member and which is bisected by a continuous semi-circular groove, as claimed by the Applicant in claim 1. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 102(b) of independent claim 1, and dependent claims 2-3, 6 and 7, which depend from claim 1, for the same reasons.

Regarding claim 2, the Examiner points to Makino as disclosing a rotating member having a press fit hole and a fixing member with first and second members, purportedly anticipating the invention as claimed by the Applicant in claim 2.

However, for the reasons noted above, the Applicant asserts that the base 10 and housing 12 of the Makino reference do not disclose nor reasonably suggest each element of claim 1 as amended from which claim 2 depends. Specifically, the Applicant asserts that the base and housing of the Makino reference do not disclose nor reasonably suggest a second member extending substantially perpendicular from a first member and which is bisected by a continuous semi-circular groove, as claimed

by the Applicant in claim 1. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 102(b) of dependent claim 2 for the same reasons.

Regarding claim 3, the Examiner points to Makino as disclosing a rotating member having a pair of arc-shaped holes into which a pair of screws are inserted to fix the rotating member to the first member of the fixing member, purportedly anticipating the invention as claimed by the Applicant in claim 3.

However, for the reasons noted above, the Applicant asserts that the base 10 and housing 12 of the Makino reference do not disclose nor reasonably suggest each element of claim 1 as amended from which claim 3 depends. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 102(b) of dependent claim 3 for the same reasons.

Regarding claim 6, the Examiner points to Makino as disclosing a driving circuit board, purportedly anticipating the invention as claimed by the Applicant in claim 6.

However, for the reasons noted above, the Applicant asserts that the Makino reference does not disclose nor reasonably suggest each element of claim 1 as amended from which claim 6 depends. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 102(b) of dependent claim 6 for the same reasons.

Regarding claim 7, the Examiner points to Makino as disclosing a collimating lens and lens holder, the lens holder being placed in the second member of the fixing unit, purportedly anticipating the invention as claimed by the Applicant in claim 7.

However, for the reasons noted above, the Applicant asserts that the Makino reference does not disclose nor reasonably suggest each element of claim 1 as amended from which claim 7 depends. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 102(b) of dependent claim 7 for the same reasons.

Regarding claim 15, the Examiner points to Makino as disclosing the fabrication of a multibeam light source, purportedly anticipating the invention as claimed by the Applicant in claim 15.

However, the Applicant has amended claim 15 to further recite an assembly step comprising “securing” a laser diode for emitting a plurality of laser beams “with a rotating member, securing the rotating member with a first member of the fixing member, and placing a collimating lens assembly in a continuous semi-circular groove of a second member of the fixing member extending substantially perpendicular from the first member of the fixing member”. This is not new matter, and is noted throughout the specification (see paragraphs 47 and 48, and Fig. 3B). Claim 16 has been further amended to correct antecedent basis.

In regard to claim 15 as amended, the Applicant has recited an exemplary embodiment of the present invention which comprises securing a laser diode with a fixing member with first and second perpendicular members. Specifically, the Applicant has recited placing a collimating lens assembly in a continuous semi-circular groove of a second member perpendicular to a first member.

The Applicant asserts that the Makino reference does not disclose nor reasonably suggest each element of claim 15 as amended. Specifically, the Applicant asserts that the Makino reference does not disclose nor reasonably suggest a fabrication step of placing a collimating lens assembly in a continuous semi-circular groove of a second member extending perpendicular from a first member as claimed by the Applicant in claim 15. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 102(b) of independent claim 15, and dependent claims 16-17, which depend from claim 15, for the same reasons.

Rejections of the Claims under 35 U.S.C. 103(a)

The Examiner has rejected claims 4-5 and 16-17 under 35 U.S.C. 103(a) as being unpatentable over Makino, in view of U.S. Patent No. 5,774,248, issued to

Komatsu (hereinafter Komatsu). Specifically, regarding claim 4, the Examiner points to Makino as disclosing the claimed invention with the exception of the gear section. The Examiner points to Komatsu as disclosing the gear section at one side, purportedly rendering obvious the invention as claimed by the Applicant in claim 4, and points to the general knowledge of those skilled in the art as disclosing a use of another gear section to compensate for backlash, purportedly rendering obvious the invention as claimed by the Applicant in claims 4 and 5.

However, the Applicant asserts that neither the Makino reference, Komatsu reference, or the general knowledge of those skilled in the art, disclose or reasonably suggest, alone or in combination, a fixing member having a second member extending substantially perpendicular from a first member and which is bisected by a continuous semi-circular groove as claimed by the Applicant in claim 1 as amended, from which claims 4-5 depend. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 103(b) of dependent claims 4-5, for the same reasons.

Regarding claims 16-17, the Examiner points to Makino as disclosing the claimed invention with the exception of the alignment jig. The Examiner points to Komatsu as disclosing the alignment jig, purportedly rendering obvious the invention as claimed by the Applicant in claims 16 and 17.

However, the Applicant asserts that neither the Makino reference, Komatsu reference, or general knowledge of those skilled in the art, disclose or reasonably suggest, alone or in combination, a fabrication step of placing a collimating lens assembly in a continuous semi-circular groove of a second member extending perpendicular from a first member as claimed by the Applicant in claim 15 as amended, from which claims 16-17 depend. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 103(b) of dependent claims 16-17, for the same reasons.

The Examiner has rejected claim 8 under 35 U.S.C. 103(a) as being unpatentable over Makino, in view of U.S. Patent No. 6,961,077, issued to Makino

(hereinafter Makino2), and in view of U.S. Patent No. 6,549,228, issued to Watanabe (hereinafter Watanabe). Specifically, regarding claim 8, the Examiner points to Makino as disclosing the claimed invention with the exception of the semi-circular groove of the second member having holes at both sides. The Examiner points to Makino2 as disclosing a bracket with holes at both sides, and points to Watanabe as disclosing a U shaped frame 27 supporting a collimating lens 3, purportedly rendering obvious the invention as claimed by the Applicant in claim 8.

However, the U shaped frame 27 of Watanabe is not a part of a single fixing member, but is provided in addition to the fixing member 13 that itself is secured to the circuit board 2 (see col. 5, lines 28-41). The movable member 12 is interposed between fixing member 13 and the U shaped frame 27 (see Fig. 7 and Fig. 9). Accordingly, the U shaped frame does not extend perpendicular from a first fixing frame member, but is provided separately, and is positioned substantially *parallel* to the diode driver circuit board 2 (see Fig. 9) at a distance defined by elements 13, 12, 1 and 26. Further, the edge of the frame 27 includes the notch shown in Fig. 9. The notch shown in Fig. 9 does not bisect the frame 27 as claimed by the Applicants in claim 1 as amended.

Accordingly, the Applicant asserts that neither the Makino reference, Makino2 reference, or Watanabe reference, disclose or reasonably suggest, alone or in combination, a fixing member having a second member extending substantially perpendicular from a first member and which is bisected by a continuous semi-circular groove as claimed by the Applicant in claim 1, from which claim 8 depends. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 103(b) of dependent claim 8, for the same reasons.

The Examiner has rejected claims 9 and 11-13 under 35 U.S.C. 103(a) as being unpatentable over Makino, in view of U.S. Patent No. 6,992,690, issued to Mogi et al. (hereinafter Mogi). Specifically, regarding claim 9, the Examiner points to Mogi as disclosing the claimed invention with the exception of the laser diode,

driving circuit, rotating member and fixing member of the multi-beam light source. The Examiner points to Makino as disclosing a laser diode, driving circuit, rotating member and fixing member, purportedly rendering obvious the invention as claimed by the Applicant in claim 9.

However, the Applicant has amended claim 9 to further recite a “fixing member comprising a first member for receiving the rotating member and a second member extending substantially perpendicular from the first member and bisected by a continuous semi-circular groove, for securing the first member to a frame”, and amended claims 12 and 14 to correct antecedent basis. This is not new matter, and is noted in the specification (see paragraph 47 and Figs. 3A and 3B).

In regard to claim 9 as amended, the Applicant has recited an exemplary embodiment of the present invention which comprises a fixing member with first and second perpendicular members. Specifically, the Applicant has recited a second member which extends substantially perpendicular from the first member and which is bisected by a continuous semi-circular groove.

In contrast, the Examiner points to Makino as disclosing a fixing member comprising the base 10 and housing 12. However, the base 10 and housing 12 appear as flat portions which would lie parallel to each other. Neither extend substantially perpendicular from the other, and neither is bisected by a continuous semi-circular groove, as claimed by the Applicant in claim 9 as amended.

Accordingly, the Applicant asserts that the Mogi reference and the base 10 and housing 12 of the Makino reference, do not disclose nor reasonably suggest alone or in combination, each element of claim 9 as amended. Specifically, the Applicant asserts that Mogi reference and the base and housing of the Makino reference do not disclose nor reasonably suggest a second member extending substantially perpendicular from a first member and which is bisected by a continuous semi-circular groove, as claimed by the Applicant in claim 9 as amended. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 103(b)

of independent claim 9, and dependent claims 11-13, which depend from claim 9, for the same reasons.

Regarding claims 11-13, the Examiner points to Mogi as disclosing the claimed invention of claim 11, and the claimed invention of claims 12-13 with the exception of the press fit hole of the rotating member and the rotating boss of the fixing member, and the collimating lens and lens holder. The Examiner points to Makino as disclosing the press fit hole of the rotating member and the rotating boss of the fixing member, and the collimating lens and lens holder, purportedly rendering obvious the invention as claimed by the Applicant in claims 12 and 13.

However, the Applicant asserts that neither the Makino reference or the Mogi reference disclose or reasonably suggest, alone or in combination, a fixing member having a second member extending substantially perpendicular from a first member and which is bisected by a continuous semi-circular groove as claimed by the Applicant in claim 9, from which claims 11-13 depend. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 103(b) of dependent claims 11-13, for the same reasons.

The Examiner has rejected claim 10 under 35 U.S.C. 103(a) as being unpatentable over Mogi, in view of Makino, in view of U.S. Patent No. 5,758,950, issued to Naoe et al. (hereinafter Naoe). Specifically, regarding claim 10, the Examiner points to Mogi as disclosing the claimed invention with the exception of fixing the light source unit to the bottom of the frame. The Examiner points to Naoe as disclosing the fixing of the light source unit to the bottom of the frame, purportedly rendering obvious the invention as claimed by the Applicant in claim 10.

However, the Applicant asserts that neither the Mogi, Makino or Naoe references disclose or reasonably suggest, alone or in combination, a fixing member having a second member extending substantially perpendicular from a first member and which is bisected by a continuous semi-circular groove as claimed by the Applicant in claim 9, from which claim 10 depends. Accordingly, the Applicant

respectfully requests the withdrawal of the rejection under 35 U.S.C. 103(b) of dependent claim 10 for the same reasons.

The Examiner has rejected claim 14 under 35 U.S.C. 103(a) as being unpatentable over Mogi, in view of Makino, in view of Makino2, and in still further view of Watanabe. Specifically, regarding claim 14, the Examiner points to Mogi in view of Makino as disclosing the claimed invention with the exception of the semi-circular groove and the plurality of holes in the fixing unit. The Examiner points to Makino2 as disclosing the plurality of holes and points to Watanabe as disclosing a U shaped supporting frame, purportedly rendering obvious the invention as claimed by the Applicant in claim 14.

However, as noted above, the U shaped frame 27 of Watanabe is not a part of a single fixing member, but is provided in addition to the fixing member 13 that itself is secured to the circuit board 2 (see col. 5, lines 28-41). The movable member 12 is interposed between fixing member 13 and the U shaped frame 27 (see Fig. 7 and Fig. 9). Accordingly, the U shaped frame does not extend perpendicular from a first fixing frame member, but is provided separately, and is positioned substantially *parallel* to the diode driver circuit board 2 (see Fig. 9) at a distance defined by elements 13, 12, 1 and 26. Further, the edge of the frame 27 includes the notch shown in Fig. 9. The notch shown in Fig. 9 does not bisect the frame 27 as claimed by the Applicants in claim 1 as amended. Accordingly, the Applicant asserts that neither the Mogi, Makino, Makino2, or Watanabe reference, disclose or reasonably suggest, alone or in combination, a fixing member having a second member extending substantially perpendicular from a first member and which is bisected by a continuous semi-circular groove as claimed by the Applicant in claim 9, from which claim 14 depends. Accordingly, the Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 103(b) of dependent claim 14, for the same reasons.

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Conclusion

In view of the above, it is believed that the application is in condition for allowance and notice to this effect is respectfully requested. Should the Examiner have any questions, the Examiner is invited to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,

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